

# From *Metastasis* to *Pithoprakta*: A reading into stochastic music

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Our presentation will concern itself with early manifestations of stochastic music in the developments of Xenakis' theories and practice. Taking the composer's first published text on the subject (Xenakis 1956) as a reference point, we will proceed from the work that immediately preceded it, *Metastasis* for orchestra (1953-1954), rather than, as is more usual, towards the work it directly refers to, *Pithoprakta* for orchestra (1955-1956).

As it explicitly expresses in its overall form, *Metastasis* articulates two radically different types of material. Intertwined glissandi textures in the first and last sections are opposed, without necessarily occurring independently, to serially inspired progressions in the middle section. With these, Xenakis not only inaugurates a central opposition of his musical universe—that which occurs between continuous and discontinuous sounds (or textures)—but also summons into center stage the idea of a musical progression built both *through* continuous transformations and *in* the continuity of time.

Our reading of *Metastasis* will concentrate on these later aspects. They will be considered not only as they appear in the work itself, but also as reflections of more general questions within Xenakis' compositional universe. These concern both the "operational" level, with the wish to expand on the means of obtaining "continuous" types of progressions, as well as a more "epistemological" one, with the necessity to (re)define the notion of similarity in a way that is compatible within these new confines.

The introduction of concepts from probability theory and the first application of what Xenakis later called "stochastic music" will then be read as providing provisional answers to these questions.

Setting our eyes beyond *Pithoprakta*, we will close our presentation with speculations on how later compositions by Xenakis could also be considered as providing, to use the composer's own formulation, "answers to arrays of questions" (Xenakis 1979:19). The middle to long-term horizon of such research would be the restoration of a continuity within the developments of Xenakis' practice, offering what we hope would be a more unified perspective on his musical universe in general.

## References

Antonios Antonopoulos, "De la modélisation matricielle dans *Pithoprakta* de Iannis Xenakis, Approche systémique et analytique," PhD diss., University Paris IV-Sorbonne, 2008.

Linda M. Arsenault, "An introduction to Iannis Xenakis's Stochastic Music: Four Algorithmic Analyses," PhD diss., University of Toronto, Canada, 2000.

André Baltensperger, *Iannis Xenakis und die Stochastische Musik, Komposition im Spannungsfeld von Architektur und Mathematik*, Zürich: Paul Haupt Verlag, 1996.

Anne-Sylvie Barthel-Calvet, "La vitesse, mesure de la continuité sonore chez Xenakis" in Makis Solomos et al. (eds.), *Proceedings of the International Symposium Iannis Xenakis* (Athens, May 2005), online : <http://cicm.mshparisnord.org/ColloqueXenakis/>

Anne-Sylvie Barthel-Calvet (ed.), Iannis Xenakis, "Métastassis-Analyse: Un texte inédit de Iannis Xenakis sur Metastasis," *Revue de musicologie*, 89/1 (2003) :129-187.

Peter Böttinger, "Zeitgestaltung," *Musik-Konzepte* 54-55 (1987) : 43-70.

Bosseur Jean-Yves, "Nach der Gesetz der großen Zahl. Zu Pithoprakta (1955/56) für Orchester von Iannis Xenakis," *MusikTexte* 92 (2002) : 63-66.

François Delalande, *Il faut être constamment un immigré. Entretiens avec Xenakis*, Paris: Buchet/Chastel, INA-GRM, 1997.

Agostino Di Scipio, "Compositional Models in Xenakis's Electroacoustic Music," *Perspectives of New Music* 36/2 (1998) :201-243.

Rudolf Frisius, "Konstruktion als chiffrierte Information," *Musik-Konzepte* 54-55 (1987) : 91-160.

Gibson Benoît, "La théorie et l'œuvre chez Xenakis : éléments pour une réflexion," *Circuits* 5/2 (1994) : 41-54.

Benoît Gibson, "Théorie et pratique dans la musique de Iannis Xenakis : à propos du montage," PhD diss., École des Hautes Études en Sciences Sociales, France, 2003.

Henning Lohner, "Explosion und Klangfarbe in *Metastasis* und *Akea*," *Musik-Konzepte* 54-55 (1987) : 28-42.

Makis Solomos, "À propos des premières œuvres (1953-1969) de Iannis Xenakis," PhD diss., Paris IV-Sorbonne, France, 1993.

Iannis Xenakis, "La crise de la musique sérielle," *Gravesaner Blätter* 1 (1955) : 2-4 (Reprinted in *Kéleütha* p. 39-43).

Iannis Xenakis, "Wahrscheinlichkeitstheorie und Musik," *Gravesaner Blätter* 6 (1956): 28-34 (Reprinted in French and with slightly modifications in *Kéleütha* p. 46-53)

Iannis Xenakis, *Musique Architecture*, 2dn Edition, Paris: Castermann, 1976.

Iannis Xenakis, *Arts/Sciences. Alliages*, Tournai: Casterman, 1979.

Iannis Xenakis, Alain Galliani (dir.), Benoît Gibson (pref.), *Kéleütha*, Paris, L'Arche, 1994.

Iannis Xenakis, *Formalized Music: Thought and Mathematics in Composition*, NewYork: Pendragon Press, 1992.

Bálint András Varga , *Conversations with Iannis Xenakis*, London: Faber and Faber, 1996.

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